FEDERAL FINANCIAL REPORTING: ACCRUAL ACCOUNTING AND THE BUDGET

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FEDERAL FINANCIAL REPORTING:
ANALYSIS OF ACCRUAL ACCOUNTING AND THE BUDGET

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PREFACE

Federal Financial Reporting: Analysis of Accrual Accounting and the Budget is intended to aid those concerned with improving the format of the budget of the United States. The paper analyzes proposals for changes in federal budget practice put forth in a report, Sound Financial Reporting in the Financial Sector, issued in 1975 by the accounting firm of Arthur Andersen and Co., which have received considerable attention in the U.S. Department of the Treasury and elsewhere.

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CHAPTER I BACKGROUND

In September 1975, Arthur Andersen & Company, an accounting firm (hereafter referred to as Andersen), published a study of federal government accounting practices. The study was undertaken at the firm's own initiative because of its concern that "all too often, the financial statements of government units have proven to be less than adequate for providing basic financial information." 1/

The report concludes with five recommendations for financial accounting in the federal government. Three of these are rather general, with no immediate or direct implications for the structure and content of federal financial statements, and are not the concern of this analysis. 2/ The other two recommendations, however, do have very direct implications for the content and usefulness of federal budget statements. They are as follows:

> Accrual accounting should be adopted. This was recommended by the Hoover Commission and is required by Public Law 84-863, which was passed in 1956. 3/

1/ Sound Financial Reporting in the Public Sector: A Prerequisite to Fiscal Responsibility (Cleveland: Arthur Andersen & Company, 1975), p. 1.

2/ These recommend strengthening and integrating financial management systems and functions, establishing a central accounting department in the executive branch of the government, and providing internal checks and balances for the accounting process.

3/ The term "accrual accounting," when applied to the budget or national income data, ordinarily means the adjustment of certain accounts to reflect

> The federal government should take the leadership now in developing fiscal responsibility by publishing consolidated financial statements. 4/

The implications of these two recommendations are illustrated in the report by a sample set of consolidated financial statements for the United States Government as of June 30, 1973 and June 30, 1974, and for the fiscal years ending on these dates. This set of statements comprises a U.S. Government balance sheet, a consolidated statement of revenues and expenses (which essentially is a revised version of the unified budget statement), and a consolidated statement of changes in cash and cash equivalents. The present paper is most directly concerned with the effects of the Andersen recommendations on the unified budget. There are two major dimensions in which the Andersen version of the unified budget differs from the current form of the budget:

- Andersen recommends discounting 5/ to the present the anticipated streams over a considerable future period (e.g., 25 or 30 years for

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current real activity which has not yet resulted in actual financial flows. An example would be tax liabilities that have been accrued because income has been earned currently, but that have not yet actually been paid. For further discussion of this definition and the somewhat different definition used by Andersen, see Chapter II.

4/ Ibid, p. 27.

5/ Present-value discounting is a procedure used to assign a present-period value to the promise of the receipt of a certain sum or sums (or the requirement to pay a certain sum or sums) at some specific future date or dates. For example, consider the value today of the promised receipt of one dollar a year from today. If funds can be invested (e.g., deposited in a savings account) at interest rate r, then there is some amount x

some programs) of outlays and receipts of a number of transfer programs. 6/ The present value of outlays less the present value of program-related receipts is shown as a liability in the federal balance sheet. Changes in

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that, if deposited at rate r today, will be worth one dollar a year from today. That is, $x(1 + r) = \$1$. The amount x may be found by simple algebra: $x = \frac{\$1}{1 + r}$, and x is defined as the present discounted value (PDV) of a dollar anticipated a year from today. Thus if the interest rate is 6 percent, the PDV of a dollar promised one year from now is $\frac{\$1}{1 + .06}$, or 94.34 cents. Since one dollar can be realized a year from now by investing (e.g., depositing) 94.34 cents today, one should be willing to pay no more than this today for the promise of a dollar a year from now (if the interest rate is 6 percent).

This procedure generalizes directly to streams of receipts or outlays of various amounts (or their difference) anticipated at different points in time. For example, the present discounted value of the promise of two dollars a year from now, and five dollars more two years from now, at 6 percent interest, is:

$$PDV = \frac{\$2}{1.06} + \frac{\$5}{(1.06)^2} = \$6.337.$$

In all of these calculations, the interest rate r is called the discount rate.

6/ The programs are social security, civil service retirement and disability, veterans' benefits, and military retirement.

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this liability figure, which arise from one year to the next as the streams are reestimated or as the discounting rate changes, are shown as an expense in the Andersen version of the unified budget. (If the liability rises, it is shown as an expense; if it declines, it presumably is shown as a revenue gain.) This imputation affects the unified budget deficit dollar for dollar.

- Andersen recommends depreciating the federal government's depreciable assets and including a depreciation expense item in the revised unified budget. This operation also affects the budget deficit on a dollar-for-dollar basis.

These two procedures seem to be the most important aspects of Andersen's concept of accrual accounting as related to the federal government. Their application may result in a considerable increase in the size of the unified budget deficit. For example, the reported fiscal year 1974 deficit was $3.5 billion; making the adjustments recommended by Andersen changed it to $95.1 billion.

A program to develop and produce consolidated financial statements for the federal government on an accrual basis has been announced by the Secretary of the Treasury. 7/ As will be explained below, the precise meaning of the term "accrual accounting" is not defined in any legislation; therefore, it is revealing that former Treasury Secretary Simon, testifying before the Senate Appropriations Committee on January 30, 1976, said, "...I am proposing that government accounting be placed on an accrual basis where unfunded liabilities are fully recognized."

7/ Federal Register, Vol. 41, No. 88, May 5, 1976, p. 18542.

To this end, the Treasury has appointed an Advisory Committee on Federal Financial Statements which is chaired by Mr. Harvey Kapnick, Chairman of Arthur Andersen & Company. It is planned that the first set of statements will appear early in 1978, to cover fiscal year 1977.

This paper is concerned with the possible damage to the integrity of the unified budget as a management tool and an aid to economic analysis that could result from use of these procedures. It is argued below that both of the Andersen proposals are inappropriate ways of adjusting the unified budget figures. Specifically, the paper discusses the Andersen recommendation of discounting, its relation to accrual accounting, and the problems with its use. Then the paper addresses the Andersen recommendation for depreciation of federal property and associated problems.

It is recognized, of course, that some accounting changes that involve discounting could improve the federal budget. For example, the Administration may propose some retirement accounting changes to improve the consistency and management information on the budget. 8/ But these accounting changes will not affect total outlays in the budget, nor the federal deficit, as the Andersen proposals do. Thus the disadvantages associated with the Andersen proposals are not associated with these retirement accounting changes.

8/ See Retirement Accounting Changes: Budget and Policy Impacts, CBO Background Paper, April 1977.

In regard to discounting, issues arise at a number of levels. As indicated earlier, there is a definitional question: does the concept "accrual accounting" as used by the federal government, and as interpreted in the context of federal government use by accountants outside the government, clearly include discounting to the present of actual and putative future net liabilities related to transfer programs as the Andersen report seems to assume?

While it is instructive to look into this definitional question, a more important issue is whether federal government accrual accounting for the budget should encompass present value discounting of these liabilities. This question itself has several dimensions. For example, Andersen takes the position that the legal question is paramount and argues that if a transfer program involves future legal commitments, it is appropriate to discount; and this view is extended to the social security program on the grounds that, while legal obligations to pay future benefits to current contributors may not exist, there exists moral commitment that is equally binding. 9/ The present study takes the position that

9/ "Part II, Selected Supporting Documentation" of the Arthur Anderson & Company report, Sound Financial Reporting in the Public Sector, notes on page 29, "Section 201-H of the Social Security Act specifies that payments shall be made only to the extent of the trust. We have also been advised by a representative of the General Counsel of the HEW that a Supreme Court case clearly sets forth that beneficiaries are not entitled by contractual right to receive benefits or even to receive amounts previously contributed by them. Therefore, the

the budget's integrity as an economic document reflecting current levels of resource use and current allocative decisions is of overriding importance. Future transfer program commitments, whether these commitments are legal or moral, should not be allowed to affect budget totals because future commitments are not related directly to the current level of resource use or to current resource allocation. If information about future transfer program commitments is included in the budget--for example, to improve management information--it should be included in a way that leaves budget totals unchanged. Alternatively, such information could be attached to the present budget format as a memorandum or appendix.

Finally, a number of somewhat more mechanical problems related to the use of discounting are brought up: choice of the appropriate discount rate, effects of variations in the rate and problems with its use; consistency across the budget as regards discounting; etc.

ACCRUAL ACCOUNTING AND DISCOUNTING

As the Andersen report indicates, adoption of accrual accounting by the federal government is not a new idea. It was required for Comptroller General approval

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social security program is based implicitly on the concept that future payments will be forthcoming at the discretion of Congress.... The Social security trust funds are currently invested in U.S. Government securities, which rely for settlement upon the future taxing power of the government.... As a result, financing of the social security system relies...directly upon the future taxing power of the U.S. government.... The above discussion clearly indicates that the government has an implicit and moral commitment, through future taxing, to honor its obligations under the social security system. Therefore, we have concluded that the government has a real liability to the citizens for these benefits...."

of agency accounting systems under the Budget and Accounting Procedures Act of 1950, and was made mandatory for agency accounts in a 1956 amendment to that act. 10/ Furthermore, the President's Commission on Budget Concepts recommended that federal purchases and receipts be reported on an accrual basis (a recommendation that has never been implemented). 11/

Though the use of accrual accounting has been recommended repeatedly and mandated by law, the term itself has not been defined precisely in the law or in the report of the President's Commission on Budget Concepts, according to an opinion by CBO's general counsel (see Appendix). Instead, Congress has left this question up to the Comptroller General, who has provided a layman's definition to the effect that ". . .the term 'accrual accounting' refers to the recording in accounts of financial transactions as they actually take place (that is, as goods or services are purchased and as revenues are earned), even though the cash involved in such transactions is paid out or received at other dates." 12/ This publication goes on to state that an accrued expenditure is "...the financial measure of the requirement to pay for goods or services that have been ordered and received." 13/ And in answer to the question, "Under

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10/ See Sound Financial Reporting in the Public Sector, "Part II, Selected Supporting Documents" for a fairly detailed survey of federal government accounting legislation and history.

11/ The President's Commission on Budget Concepts was established early in 1967 by President Johnson. Its task was to review the budget concepts and models of presentation then in use and to recommend appropriate changes. Its report was issued in October 1967.

12/ United States General Accounting Office, Frequently Asked Questions About Accrual Accounting in the Federal Government, 1970, p. 3.

13/ Ibid, p. 4.

what circumstances would...the federal budget total for outlays significantly differ if stated in terms of accrued expenditures rather than cash disbursements?," the GAO answers, "Total budget outlays (expenditures) on the accrual basis for a given fiscal period...would differ greatly from expenditures stated on the cash disbursement basis when there are large and rapid increases or decreases in the amounts of goods and services procured." 14/

The point illustrated by these quotations is that the term "accrual accounting" as applied to the federal budget seems to have been understood to mean the shorter-run adjustment of budget figures to reflect changes in underlying current-period real resource usage rates or output (and tax liability) generation which have not yet resulted in actual payments being made. There is no evidence that it is typically interpreted to include present value discounting where the federal budget is concerned. In this connection, a statement on the report of the President's Commission on Budget Concepts by the Executive Committee of the American Institute of Certified Public Accountants is especially revealing. The Committee wrote, "Reporting budget expenditures and receipts on an accrual basis is one of the more significant recommendations of the President's Commission.... Because the Report of the President's Commission does not call for the accrual of future commitments for items such as social security benefits and veterans' pensions, the Executive Committee believes that the budget document should contain summary disclosures of the amounts of these commitments. 15/ /Emphasis added./ The Secretary of the Treasury apparently was aware of this distinction since he made a point of telling the Senate Appropriations Committee, in testimony on January 30, 1976, that under the Treasury's program, government accounting would be placed on an accrual basis,"... where unfunded liabilities are fully recognized."

14/ Ibid, p. 18.

15/ Quoted in the Congressional Record, March 18, 1968, p. H1981.

In view of the fact that the usual interpretation of the term "accrual accounting" as applied to the federal budget does not encompass present-value discounting, and that this distinction was recognized clearly in the AICPA statement, it is remarkable that the Arthur Andersen & Company report never discusses this question and proceeds as though the former obviously includes the latter.

THE ECONOMICS OF DISCOUNTING FOR THE FEDERAL BUDGET

While it is useful to examine the common understanding of these definitions, the central question is substantive, not definitional. Whatever the actual practice may have been, should anticipated transfer program revenues and outlays be discounted to the present and the changes in these calculations from year to year allowed to influence totals in the current-year unified budget?

Andersen, the Treasury, and others argue for discounting on the grounds that, under several of the programs, future benefits as well as revenues are based on legal or quasi-legal commitments by the federal government. Since these commitments exist, the argument runs, they should be discounted to the present and shown as a current liability on a federal balance sheet to the extent that they are not covered by existing specific tax or contribution programs. Following standard business accounting practice, Andersen argues that the changes in this liability item from year to year should be considered a current expense and should affect budget totals.

This line of reasoning views the federal budget as though it were exactly comparable to a business' profit and loss statement. Actually, there are profound differences between government and businesses in this regard. A business' liabilities represent its obligations to some external party, while the profit and net worth items on its financial statements represent the return to and net ownership claim of its owners. In the case of the federal government, liabilities like future pension claims are liabilities not to a third party but to its own citizens who also, in effect, own its assets. Therefore, the business-accounting premise that assets

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exist to cover third-party liabilities, with the residual going to the owners, loses meaning in the federal government context, where there are no third parties (except foreign creditors).

Federal financial statements--particularly the budget--have a much more important function: to measure the impact of government operations on the economy in terms of the current real cost of programs as gauged by resource use and changes in the level of activity. The issue is not a legal, but an economic one. It is precisely in order to make the budget a better indicator of this current real impact that the kinds of adjustments generally understood as "accrual accounting" are made. The discounting of transfer program income and outlay streams must be viewed in the same light: would it result in an improvement in the federal budget as an indicator of the government's impact on the real economy?

In the view of this paper, the answer is no. Amending the budget by discounting along the lines proposed by Andersen severely distorts its usefulness as a measure of the government's impact on the economy. The programs involved essentially are transfer programs that shift available resources from some groups to others within the economy, without altering substantially the overall level of current or future activity and resource use. Though two of the programs in question (social security and civil service retirement) operate trust funds, the net contributions to these funds over and above disbursements are invested in new federal government debt (and if outlays exceed revenues, the trust funds return securities from their portfolios to the Treasury), which simply changes the Treasury's need for external financing in the same way as though the programs were financed through the general budget rather than through program-specific taxes and trust funds. 16/

16/ For example, suppose that in a given year the social security trust fund takes in $120 billion from current contributions; during the same year, suppose it pays out $100 billion. For the remainder

So all of these programs, whatever the details of the mode of financing (general revenues vs. a trust fund that holds newly issued federal debt), operate in the same way; they are "pay-as-you-go" schemes. The contributions (or taxes) associated with the program are paid by people who currently are nonbeneficiaries, and these payments serve to suppress current-period claims on resources by these groups. The beneficiaries use their receipts under the program to claim these resources for current consumption.

Therefore it is clearly only the current-period taxes or contributions and current-period benefit payments that are relevant for the size and distribution of currently produced output. And since in fact the programs are not designed to channel savings to the capital markets, their operation is probably similar to the effects of other federal transfer programs with regard to the overall level of activity. 17/ Yet the Andersen

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of the federal budget, let spending be $400 billion and tax revenues $350 billion. The Treasury will issue $50 billion of new securities, of which $20 billion will be held by the social security trust fund and $30 billion will be sold to the general public. If the trust fund mechanism were not used and payroll tax revenues simply were merged with other revenues, $30 billion of debt also would be sold to the public. The point is that the government's net claim on the capital market is the same under the two systems; the existence of a trust fund has no particular implications for the current pace of economic activity, the availability of funds to finance new investment in plant and equipment, etc. when programs are run on a pay-as-you-go basis. See footnote 25 below for a brief discussion of an alternative procedure under which these programs could change the amount of aggregate saving and capital formation.

17/ While the retirement programs, especially social security, have been viewed by some as programs designed to force workers to save more because they

discounting procedure would often change considerably the unified budget deficit as now calculated, which would lead to inferences that fiscal policy was very much more expansionary or deflationary than actually was the case. For example, the actual unified budget deficits (including trust funds) for fiscal years 1973 and 1974 were $14.8 billion and $4.7 billion respectively. Andersen has recalculated these deficits to have been

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will not make adequate provision for retirement if left to themselves, the overall level of capital accumulation and hence the growth rate of total output will not be affected as long as no action is taken to make the new savings available to the capital market. In fact, there are some grounds for believing that the aggregate saving rate (and therefore economic growth), if it is affected at all, is lowered by such programs. For one thing, income is being shifted from workers, with lower propensity to consume, to nonworking beneficiaries, whose propensity to consume probably is higher. To the extent that these propensities differ and that installation of the programs increases the amount of resources shifted, this alone would raise the aggregate consumption propensity and lower the overall saving rate. And Martin Feldstein has argued that workers themselves might consume more out of a given income under these programs, because they perceive their own anticipated benefits as real wealth (that is, they discount these perceived benefits to the present) even though no real wealth is being created. (See Martin Feldstein, "Social Insurance," paper prepared for the Conference on Income Redistribution, American Enterprise Institute for Public Policy Research and the Hoover Institution, 1976.)

$86.6 billion and $95.1 billion, with most of the difference due to their discounting of the anticipated uncovered liabilities under the transfer programs. 18/ and 19/

The present values of the stream of uncovered estimated future liabilities under these programs can vary considerably for a variety of reasons that may be quite unrelated to the current level of activity. Examples are planned changes in the program that will become effective at some future date, expected changes in the basic determinants of the discounting rate (such as the rate of growth of the labor force), changes in anticipated future inflation rates, or changes in the tax or contribution system used to support the programs. It, therefore, seems quite inappropriate to allow such changes to affect the deficit as presently calculated in the unified budget.

Of course, other uses of the budget may argue for inclusion of some information based on discounted future values, so long as budget totals and the deficit are not changed. In addition to measuring impact on the economy, the federal budget document must provide incentives to federal managers that cause them to make economical use of resources. This function of the budget may argue for inclusion of information based on discounted future values of, say, retirement costs. In fact, improving

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18/ In any given year, the deficit is affected by the change as compared to the previous year in the calculated present value of the estimated stream of uncovered liabilities. This change in a balance sheet item is interpreted as a current expense.

19/ These revised deficit totals also reflect a depreciation adjustment estimated to be $12.8 billion in fiscal year 1973 and $13.2 billion in 1974. It is argued below that this adjustment also is improper.

management information is a prime reason that the Administration may recommend changes in retirement accounting. 20/ But, as was indicated earlier, these retirement accounting changes will not affect the budget totals. Therefore they do not result in the problems discussed above. As has been indicated above, such information could be shown in a memorandum or appendix to the budget rather than as entries in the budget itself.

OTHER PROBLEMS

While the issues discussed above are perhaps the most fundamental ones with regard to discounting and the federal budget, there also are some serious operational problems with the Andersen discounting proposal. Two of these will be examined here: the question of consistency across the entire budget, and some problems regarding the interest rate used to discount future revenues and outlays to the present.

Consistency Across the Budget

The Andersen proposal, as outlined in their report, is inadequate because it advocates applying the discounting procedure only to a small number of transfer programs. To be consistent, the same procedure should be applied to the entire budget, if it is to be used at all. After all, it is not only the retirement programs that are expected to live on through time; the other functions of the federal government are just as likely to persist. Since the revenues and outlays projected for social security and other programs are based on current law, it would seem both logical and consistent to project current-law outlays and revenues for all other taxing and spending programs across the same time span as these programs, and then discount all of them to the present in the same way. Putting it differently, the Andersen report assigns no current value whatever to the

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20/ See Retirement and Accounting Changes, CBO Background Paper.

future general taxing power and spending programs of the federal government, even though it assigns considerable value to the future outlays and revenues connected with the transfer programs it considers. This is a glaring inconsistency that, if remedied, would very probably cause the recalculated unified budget deficit to be converted into a substantial surplus rather than the extremely large deficits shown in the Andersen report (because current tax laws combined with a projection of current spending programs will generate a considerable surplus in future years under reasonable assumptions about future output growth, inflation, population change, etc.)

This point is important not just for consistency's sake, but also because a fundamental difference between the federal government and a business is that the government cannot, in general, pay off its liabilities (e.g., future commitments under retirement programs) by liquidating its tangible assets (military bases, highways, national parks). It is the government's taxing power (supplemented by its ability to sell securities backed by its full faith and credit, and its ability to issue money), that is in fact its greatest asset in this context. Therefore, it makes no sense to show as a liability the present value of its future transfer program commitments without showing as an asset the present value of its future tax receipts under its general income, profit, and indirect business tax programs. 21/

21/ State and local government units stand somewhere between the federal government and private firms in these respects, so the procedures recommended by Andersen and criticized here may have some relevance for them. These units, while possessing taxing powers, may not issue money; and outlays for current operations usually are constrained to be at or near the level of current-period receipts, with longer-term borrowing typically allowed only to finance capital outlays. They most closely parallel businesses in this context in that much or all of their outstanding debt obligations may be held by third parties; that is, by individuals and institutions not within their jurisdictions.

Finally, even though assets like national parks or federal grazing lands are rather illiquid, they do have a value and that value undoubtedly is increasing over time. If a balanced picture of the federal government's net wealth position is desired, it would seem appropriate to recognize these capital gains. 22/ The Andersen report values at cost all assets of the federal government included in their consolidated balance sheet. 23/ The considerable capital gain which undoubtedly has occurred would, if recognized and treated as current income, also push the recalculated deficit into a considerable surplus.

The Rate of Discount

There are a number of serious problems connected with the use of a rate of interest to discount future income and outlay streams. These problems are generally recognized and have been discussed quite thoroughly in the economics literature, so the present discussion will be brief.

First, it is difficult to know what value to use. The Treasury presently publishes a report in which it

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22/ This point is made in "Constructing a Balance Sheet for the U.S.," Morgan Guaranty Survey, May 1976, p. 8, which states, "To be consistent with gross national product (GNP), which is valued in market prices..., national and sectoral balance sheets and the tangible wealth components must be valued likewise rather than at acquisition or original costs as is customary in corporate balance sheets. sheets.... Theoretically, market values represent the present (discounted) value of the expected net income from the capital goods over their lifetimes."

23/ Andersen, Sound Financial Reporting, p. 8.

calculates the present value of future uncovered retirement and disability program outlays and revenues. 24/ For this report as of June 30, 1975, the Treasury was using its long-term borrowing cost--about 7.4 percent--to discount revenues and benefits for the programs considered here. The Social Security Administration presently is using a discount rate of 6.6 percent (as in the present-value estimates of Old Age and Survivors Insurance and Disability Insurance outlays and revenues shown in Table 1 below).

The fundamental idea of discounting is that a unit of resources not consumed currently can, through investment, be converted into more than a unit of resources in the future; thus there is a payoff to present saving in the form of increased future consumption. From one individual's point of view, this process can be effectuated, for instance, by depositing funds in a bank or by buying a security on the bond or stock market. It is the function of such institutions and markets to transmit funds to entrepreneurs for investment. For such an individual saver, the savings deposit rate or the yield on marketable securities measures the future gain from delaying current consumption, and is, therefore, the appropriate discount rate to use. From the point of view of the whole society, the real return on new investment probably is the appropriate discount rate when programs actually involve the diversion of resources from consumption to investment; particular market yields or deposit rates reflect particular considerations regarding risk, maturity, and so on that are relevant for the individual investor but not for the whole society. But we have already seen that the resources not consumed by

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24/ "Statement of Liabilities and Other Financial Commitments of the U.S. Government as of June 30, 19__."

workers today under social security and the other retirement and disability programs discussed in this study are not diverted to investment but in fact are consumed by beneficiaries today. 25/ Therefore, the appropriate discount rate for these programs almost certainly should be lower than the Treasury's 7.4 percent. Should it be zero, on grounds that the programs generate no new productive capacity under present financing procedures? Probably not, because even though these programs themselves result in no increase in aggregate saving and investment, today's workers can reasonably expect output to be higher when they retire than it is today, if only because of labor force growth.

Since revenues and expenditures are expressed in current-dollar terms and projections of them reflect expected inflation, the government's discount rate should include an inflationary factor (the Social Security Administration's choice of 6.6 percent reflects a judgment that the long-run inflation rate will be about 4 percent so that their "real" discount factor is about 2.5 percent). 26/ If the relevant discount rate for these

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25/ Of course, these programs could be designed so as to generate new saving and investment currently, and thus more consumable output when current savers retire. One way would be to align program taxes and outlays to generate a program surplus currently. This surplus could then be made available to the capital market by retiring privately held U.S. Government securities. Incentives to invest in new productive capacity must of course exist, and might be provided by using other taxes and expenditures, and monetary policy, to foster full employment.

26/ For a summary discussion of the determinants of the appropriate discount rate for government projects, see William J. Baumol, "On the Social Rate of Discount," American Economic Review, LVIII (September 1968), pp. 788-802, and the literature cited therein. Baumol's discussion begins by making the fundamental point that the social rate of

programs is built up on the basis of an expected labor force growth rate (adjusted to reflect labor's diminishing marginal productivity as it works with a stock of capital that is not being increased by these programs) and an expected inflation rate, then, assuming past labor force growth rates continue and using the Social Security Administration's 4 percent inflation assumption, a discount rate somewhat lower than 6.6 percent probably would be appropriate.

Whatever rate is chosen, it is clear that there is no very exact way to determine precisely what it should be. And the present value of a given stream of anticipated receipts of outlays (or their difference) can vary considerably depending on the discount rate chosen. This means, of course, that the surplus or deficit in the budget revised along the lines recommended by Andersen will be extremely sensitive to small variations in the discount rate. This point is well illustrated by

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discount should measure the opportunity cost (in terms of forgone present consumption) of diverting resources away from present consumption and into investment in new physical capital. For pay-as-you-go transfer programs like those considered here and in the Andersen report, there is, in the aggregate, no diversion of resources away from current consumption and no new capital put in place. Therefore it would appear that only considerations like those mentioned here--expected output growth due to labor force increases, and the projection of program expenditures and revenues in current-dollar form together with the assumption that the long-run rate of inflation will be greater than zero--would lead to the use of a social discount rate greater than zero. An important corollary of this line of thought is that the Treasury's current financing cost is relevant, if at all, only insofar as it reflects the expected long-term inflation rate.

the data shown in Table 1. These data give the present discounted values of Old Age and Survivors Insurance and Disability Insurance (OASDI) expenditures, contributions, and the resulting program deficits over the 30-year period 1976-2005, based on the discount rate of 6.6 percent used by the Social Security Administration and changes of one and two percentage points in each direction from this rate. 27/

27/ A 30-year period was used for these calculations because that is the span covered in the Andersen present-value calculations for these programs.

TABLE 1. PRESENT DISCOUNTED VALUES OF PROJECTED OASDI EXPENDITURES, CONTRIBUTIONS, AND DEFICITS, 1976-2005, FOR VARIOUS DISCOUNT RATES, IN BILLIONS OF DOLLARS

Present Discounted Value of OASDI	Discount Rate (Percent)				
	4.6	5.6	6.6	7.6	8.6
Contribution	3,479	3,003	2,614	2,294	2,028
Expenditure	4,505	3,827	3,280	2,834	2,469
Deficit	1,026	824	666	540	441

NOTE: These estimates were supplied by the Office of the Actuary, Social Security Administration. They are based on the following economic and demographic assumptions: a 5.75 percent average annual increase in money wages, a 4 percent average annual Consumer Price Index increase, a 5.0 percent unemployment rate, and an "ultimate fertility rate" (average number of children born per woman in her lifetime) of 1.9. These are the "Alternative II" assumptions used in the 1976 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds.

These calculations indicate that, for example, a decision to use a discount rate of 5.6 percent instead of 6.6 percent would increase the present discounted value of the anticipated OASDI deficit by $158 billion, while a decision to use 7.6 percent instead of 6.6 percent would reduce the present discounted value of the expected deficit by $126 billion. Under the Andersen proposal, changes in the present discounted value of anticipated transfer program deficits due to discount rate changes would be reflected dollar for dollar in the revised unified budget. That is, a discount rate decrease from 6.6 percent to 5.6 percent would result in a $158 billion increase in the stated budget deficit,

while a change from 6.6 percent to 7.6 percent would cause the stated deficit to decrease by $126 billion. Furthermore, the magnitudes of these calculations are such that even small discount rate changes--for instance, a change of a quarter point--would have very sizable effects on the unified budget deficit or surplus. Yet such discount rate changes have no implications at all for the current real level of economic activity or for current Treasury financing needs.

There is a further problem that may arise when the difference between a stream of revenues and a stream of outlays is being discounted, and the difference between those streams is positive in some future periods and negative in others (as could be the case, for example, for the social security program or other programs financed by specific taxes). In such a situation, it is possible that some discount rates will show a positive present value of the difference (i.e., a surplus in the program over time) while others will produce a negative value, or a deficit. 28/ This is of no consequence if the correct discount rate is chosen. But, as pointed out above, it is not at all clear what the "correct" rate should be; the choice contains a considerably arbitrary element. To the extent that an illogical or incorrect discount rate choice is made, these phenomena could result in both a further unwarranted distortion in the size of the budget deficit, and in serious misunderstanding by the public of the operation of these programs.

28/ For instance, if a particular program is expected to show a surplus for some years into the future, and then experience a deficit in later years, choice of a relatively high discount rate (which gives relatively more weight to the more immediate future) could result in a positive present value of the difference between the revenue and expenditure streams, while choice of a relatively low discount rate (which weights the more distant future relatively more heavily) could produce a negative present value.

In addition to advocating discounting, the Andersen report also recommends that federal property be depreciated, and that the annual amount of depreciation be shown in the budget as a current expense item. In its recalculation of the fiscal year 1973 and 1974 budgets, Andersen estimated the depreciation charge to be $12.8 billion and $13.2 billion, respectively, for those years. Other things being equal, the stated budget deficits for those two years, therefore, was increased by these amounts.

As before, the only concern in this study is with the logic and consistency of the budget and its integrity as a meaningful economic document, not with the usefulness of discounting or depreciation in other contexts. From the point of view of the budget, the insertion of a depreciation charge, as Andersen recommends, would seem to involve double counting and an improper inflation of the aggregated budget deficit (or diminution of the surplus) over a series of years, because it has always been standard practice to treat all government purchases, whether of a pencil or of an aircraft carrier, as current consumption. In other words, all currently existing assets have been written off fully in past budgets and their entire cost has already shown up in some past budget deficit or surplus). 29/ Adopting the Andersen depreciation proposal would necessitate substantial changes in accounting practices in order to avoid this double counting; presumably a move in the direction of capital budgeting would be required.

29/ The budgets for fiscal years 1973 and 1974 as recalculated by Andersen seem to include total government purchases as current expenses, just as before, in addition to a depreciation charge. For consistency under their approach they should only have included that part of current purchases that was currently consumed.

CHAPTER IV POSSIBLE CONSEQUENCES OF ADOPTING THE ANDERSEN RECOMMENDATIONS

The immediate consequence of adopting the Andersen recommendations regarding discounting and depreciation would be a revised unified budget statement, and surplus or deficit, that would have little usefulness either as a summary of the government's impact on the economy or as a tool for management within the government. The budget is compromised in both these dimensions because of the problems discussed in the present report.

The longer-run consequences are harder to assess. To the extent that the Andersen revisions erroneously inflate or deflate outlay and revenue totals, and, therefore, the budget surplus or deficit, there will likely arise pressures to contract (if the deficit is overstated) or expand (if the deficit is understated) government programs from their socially desirable size. More generally, it seems likely that the publication of such revised budgets and associated financial statements would generate considerable confusion among the public.

It follows from the preceding discussion that adoption of these recommendations would be likely to create serious problems of understanding, interpretation, and use with regard to budget data. At the same time, any benefits which might flow from such calculations can be realized simply by reporting transfer program revenues and expenditures, and depreciation estimates, separately on a period-by-period basis.

To date, the Congress has not by law defined the manner in which the federal government shall keep its accounts.

By an act of August 1, 1956, the Congress provided that:

> As soon as practicable after August 1, 1956, the head of each executive agency shall, in accordance with principles and standards prescribed by the Comptroller General, cause the accounts of such agency to be maintained on an accrual basis to show the resources, liabilities, and costs of operations of such agency with a view to facilitating the preparation of cost-based budgets...; (31 USC 66a(c))

Neither the committee reports accompanying the 1956 legislation nor the hearings preceding it contain a definition of the term "accrual basis." The Congress simply left the matter to the Comptroller General, who has provided a "layman's" definition, to wit:

> The term "accrual accounting" refers to the recording in accounts of financial transactions as they actually take place (that is, as goods and services are purchased or used and as revenues are earned) even though the cash involved in such transactions is paid out or received at other dates: (Frequently Asked Questions About Accrual Accounting, U.S. General Accounting Office pamphlet, 1970).

It would be an error to assert that any federal law requires a particular method for recording depreciation of federal property, or that depreciation must be

recorded at all, or that liabilities (contractual, moral, or politically inevitable) to pay sums of money at some future time be discounted to present day values, etc.

There are difficult conceptual issues in connection with the meaning of "accrual accounting" as applied to the federal government. However, the answers--if they exist--must be found without the help of a statutory guide, because none has been given.

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